



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

026541  
RITTER, LANG & KAPLAN  
12930 SARATOGA AVE. SUITE D1  
SARATOGA CA 95070

WM01/0308

03/08/01

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/435,240	11/05/99	600	FAN, C 2634	03/08/01
First Named Applicant	RALEIGH, 35 USC 154(b) term ext. = 0 Days.			

TITLE OF INVENTION TRANSMITTER INCORPORATING SPATIO-TEMPORAL PROCESSING

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
3 CISC60101	375-299.000	011	UTILITY	NO	\$1240.00	06/08/01

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

I. Review the SMALL ENTITY status shown above.  
If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number.  
Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

PATENT AND TRADEMARK OFFICE COPY

**Notice of Allowability**

Application No.

09/435,246

Examiner

Chieh M Fan

Applicant(s)

RALEIGH, GREGORY G.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 12/13/00.
2. ☒ The allowed claim(s) is/are 224-253.
3. ☐ The drawings filed on \_\_\_\_\_ are acceptable as formal drawings.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.
5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE FOR SUBMITTING NEW FORMAL DRAWINGS, OR A SUBSTITUTE OATH OR DECLARATION.** This three-month period for complying with the REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL is extendable under 37 CFR 1.136(a).

6. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
7. ☒ Applicant MUST submit NEW FORMAL DRAWINGS
  - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review( PTO-948) attached
    - 1) ☒ hereto or 2) ☐ to Paper No. \_\_\_\_\_.
  - (b) ☒ including changes required by the proposed drawing correction filed 13 December 2000, which has been approved by the examiner.
  - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE / SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

**Attachment(s)**

- |  |   |
|--|---|
| 1 <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                             | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)          |
| 3 <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 4 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____             |
| 5 <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. 2.       | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment                  |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
|  | 9 <input type="checkbox"/> Other  |

## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Dan Lang on 2/28/01.

The application has been amended as follows:

In claim **224**: line 8, "channel input" has been changed to ---one channel input---;

line 10, "said time domain substantially orthogonalizing procedure" has been changed to ---an inverse of said time domain substantially orthogonalizing procedure---.

In claim **233**: line 1, "said\_time" has been changed to ---said time---.

In claim **239**: line 8, "channel input" has been changed to ---one channel input---.

In claim **240**, line 11, "said time" has been changed to ---said inverse of said time---.

In claim **241**, line 1, "claim 242" has been changed to ---claim 239---.

In claim **243**: line 7, "said\_time" has been changed to ---said time---.

***Comment on the Preliminary Amendment***

2. An earlier preliminary amendment filed with the present application was misplaced. After the Examiner's telephone conversion with the Applicant's representative, a supplemental preliminary amendment (PTO Paper #7) that incorporated all of the changes of the earlier filed but misplaced preliminary amendment and made some additional changes to the claims was filed and entered on 12/13/00. Further to the Examiner's request, the earlier filed but misplaced preliminary amendment was re-sent, which paper has been placed of record in the file.

***Drawings***

3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 12/13/00 have been approved.

***Allowable Subject Matter***

4. Claims 224-253 are allowed and they have been renumbered.

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5. The following is an examiner's statement of reasons for allowance: the prior art of record does not teach the limitation of providing one or more spatial directions for the communications defined by corresponding weighting among the channel outputs wherein each output bin has at least one associated spatial direction, said weighting defining said one or more spatial directions so that each spatial direction corresponds to communication via more than one channel output in a transmitter.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Liu et al. (US Patent 5,905,721), Carnet et al. (US Patent 5,537,435) and Chow et al. (US Patent 5,479,447).

7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chieh M Fan whose telephone number is (703) 305-0198. The examiner can normally be reached on Monday-Friday 8:00AM-5:30PM, Alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (703) 305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6743 for regular communications and (703) 308-9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Chieh M Fan *CF*  
Examiner  
Art Unit 2634

cmf  
March 1, 2001

  
**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**